

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

# CERTIFICATE OF WAIVER OR AUTHORIZATION

ISSUED TO

**SENG LLC dba Flytcam Motion Pictures**  
**Responsible Person: Shaun Stanton**  
**Waiver Number: 107W-2016-01980A**

ADDRESS

**214 6th Street SW**  
**Albuquerque, NM 87102**

This certificate is issued for the operations specifically described hereinafter. No person shall conduct any operation pursuant to the authority of this certificate except in accordance with the standard and special provisions contained in this certificate, and such other requirements of the Federal Aviation Regulations not specifically waived by this certificate.

OPERATIONS AUTHORIZED

Night small Unmanned Aircraft System (sUAS) operations, first person view in lieu of visual line of sight operations by the remote pilot in command and Operations over human beings, for the purpose of closed-set, restricted-access motion picture and television filming and production.

LIST OF WAIVED REGULATIONS BY SECTION AND TITLE

**14 CFR § 107.29 Daylight operation**  
**14 CFR § 107.31 Visual line of sight operations**  
**14 CFR § 107.39 Operation over human beings**

## STANDARD PROVISIONS

1. A copy of the application made for this certificate shall be attached and become a part hereof.
2. This certificate shall be presented for inspection upon the request of any authorized representative of the Federal Aviation Administration, or of any State or municipal official charged with the duty of enforcing local laws or regulations.
3. The holder of this certificate shall be responsible for the strict observance of the terms and provisions contained herein.
4. This certificate is nontransferable.

NOTE—This certificate constitutes a waiver of those Federal rules or regulations specifically referred to above. It does not constitute a waiver of any State law or local ordinance.

## SPECIAL PROVISIONS

Special Provisions Nos. 1 to 42, inclusive, are set forth on the attached pages.

This Certificate of Waiver is effective from January 31, 2018 to January 31, 2022, inclusive, and is subject to cancellation at any time upon notice by the Administrator or an authorized representative.

**BY DIRECTION OF THE ADMINISTRATOR**

**General Aviation and Commercial Division (AFS-800)**

**SPECIAL PROVISIONS ISSUED TO  
Seng LLC dba Flytcam Motion Pictures**

**General.**

This Certificate of Waiver is an amendment which supersedes and replaces Waiver 107W-2016-01980 and 107W-2017-02810 issued to Flytcam Motion Pictures for operations under 14 CFR 107. Waivers 107W-2016-01980 and 107W-2017-02810 are no longer valid.

The FAA's Flight Standards Service has reviewed your application to ensure compliance with the requirements of 14 CFR § 107.200. The Administrator finds that the proposed sUAS operation can be conducted safely under the provisions of this Certificate of Waiver (Waiver) as listed below, because you have established adequate mitigations for risks involved with operating your sUAS in the manner you described. As used in this waiver, the term "operating documents" means the following: application(s) and all attachments including the Flytcam Motion Pictures, a unit of SENG LLC, UAS Motion Picture, Television, Commercial, and Survey Operations Manual and exemption issued under Section 333 of the FAA Modernization and Reform Act of 2012, docket number FAA-2015-4206-0001. The FAA used the operating documents to analyze and approve this Waiver and its associated provisions. Adherence to the provisions of this Waiver establishes the required level of safety within the National Airspace System.

This Waiver may be canceled at any time by the Administrator, the person authorized to grant the Waiver, or the representative designated to monitor a specific operation. As a general rule, this Waiver may be canceled when it is no longer required, there is an abuse of its provisions, or when unforeseen safety factors develop. Failure to comply with any provision listed below is a violation of the terms of this Waiver and may serve as justification for cancellation.

**List of Regulations Waived by Section and Title.** The following regulations are waived:

- 14 CFR § 107.29** Daylight operation, is waived to allow sUAS operations during night.
- 14 CFR § 107.31** Visual line of sight aircraft operation is waived to the extent necessary to allow the remote pilot in command (PIC) to operate the small unmanned aircraft (sUA) with first person view (FPV), in lieu of visual line of sight, while a second remote pilot and Visual Observer (VO) exercise the ability to see the sUA throughout the entire flight.
- 14 CFR § 107.39** Operations over human beings is waived to allow sUAS operations over persons authorized, for the purpose of closed-set, restricted-access motion picture and television filming and production.

**Common Provisions.** For the purposes of this Waiver, Direct Participants are human beings directly participating in the operation of the sUAS. These include the remote PIC, VO, Payload or Camera Operator, and other personnel who are designated by the remote PIC as necessary for the safe operation of the sUA.<sup>1</sup> The Responsible Person is directly responsible for safety of operations conducted under this Waiver and will ensure Direct Participants in the sUAS operation complies with all provisions of this Waiver.

1. The Responsible Person listed on the Waiver is responsible to the FAA for the safe conduct of the operations. Prior to conducting operations that are the subject of this Waiver, the responsible person:
  - a. Must ensure the remote PIC, manipulators of the controls, and VO are informed on the terms and provisions of this waiver and the strict observance of the terms and provisions herein;
  - b. Must ensure the remote PIC, manipulators of the controls, and VO are informed and familiar with part 107 regulations not waived; and
  - c. The above must be documented and must be presented for inspection upon request from the Administrator or an authorized representative.
2. This Waiver must not be combined with any other waiver(s), authorization(s), or exemption(s) without specific authorization from the FAA;
3. The FAA has the authority to cancel or delay any or all flight operations if the safety of persons or property on the ground or in the air, are in jeopardy or there is a violation of the terms of this Waiver;
4. Operations under this Waiver are to be conducted in Class G airspace only, unless specific airspace authorization or Waiver is received from the FAA in accordance with § 107.41; The airspace Certificate of Waiver or Authorization to operate at night must be requested separately, and is not part of this Waiver;
5. The Responsible Person listed on this Waiver must maintain a current list of pilots by name and remote pilot certificate numbers used in the Waiver holder's operations. This list must be presented for inspection upon request by the Administrator or an authorized representative;
6. The Responsible Person listed on this Waiver must maintain a current list of small unmanned aircraft (sUA) by registration number(s) used in the Waiver holder's operations. This list must be presented for inspection upon request by the Administrator or an authorized representative;
7. A copy of the Waiver must be available during the sUAS operations that are the subject of the Waiver;
8. All operations under this Waiver must use one or more VO;
9. The Responsible Person must ensure a remote PIC who holds a valid remote pilot certificate under part 107, is designated at all times during any operation that will occur in accordance with this Waiver. See § 107.19 for a description of the responsibilities and duties of the remote PIC. The Responsible Person must have a procedure for positive, unequivocal designation of the person who is acting as the remote PIC. This procedure must include a three-step positive

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<sup>1</sup> For purposes of this Waiver, the FAA considers anyone who is not a Direct Participant to be a "Nonparticipant."

transfer of controls. Upon such transfer, the responsibilities and duties of the remote PIC under § 107.19 will transfer, accordingly;

10. All persons who participate at any time under this waiver as a remote PIC during sUAS operations subject to this Waiver must, upon request, make available to the Administrator their remote pilot certificate issued under part 107;

**§ 107.29 Night sUAS Operations Special Provisions.** sUAS operations may be conducted at night, as defined in 14 CFR § 1.1, provided:

11. Prior to conducting operations that are the subject of this Waiver, the remote PIC and VO must be trained, as described in the Waiver application, to recognize and overcome visual illusions caused by darkness, and understand physiological conditions which may degrade night vision. This training must be documented and must be presented for inspection upon request from the Administrator or an authorized representative;
12. The area of operation must be sufficiently illuminated to allow both the remote PIC and VO to identify people or obstacles on the ground, or a daytime site assessment must be performed prior to conducting operations that are the subject of this Waiver, noting any hazards or obstructions;
13. The sUA must be equipped with lighted anti-collision lighting visible from a distance of no less than 3 statute miles. The intensity of the anti-collision lighting may be reduced if, because of operating conditions, it would be in the interest of safety to do so;

**§ 107.31 Visual Line of Sight Operations Special Provisions.** sUAS operations may be conducted with the remote pilot in command using FPV, in lieu of visual line of sight, provided:

14. Communication between the remote PIC, VO, and the onsite part 107 certificated airman (acting as VO) must allow for the remote PIC to maneuver the sUA with sufficient time to perform necessary maneuvers to avoid other aircraft in accordance with § 107.37, or react to any unforeseen operational or mechanical failure;
15. At all times, at least one person who holds a remote certificate under part 107, must maintain VLOS of sUA in order to (1) know the sUA's location, (2) determine the sUA's attitude, altitude, and direction of flight, (3) observe the airspace for other air traffic or hazards, and (4) determine that the sUA does not endanger the life or property of another. The remote pilot who is responsible for maintaining VLOS of the aircraft involved in the operations must maintain effective communication with the remote PIC who is manipulating the flight controls of the sUAS and coordinate with the remote PIC to avoid all potential collision hazards and maintain awareness of the position of the sUA throughout the entire operation;
16. As described in the waiver application, prior to and during operations that are the subject of this Waiver, the "independent command and control" feature of the sUA must operate properly;
17. As described in the waiver application, prior to conducting operations that are the subject of this Waiver, the remote PIC and the second remote pilot must maintain continuous "In-Person" voice communication;
18. As described in the waiver application, the remote PIC must fulfill the requirements of § 107.15(a) for all components of the sUAS;
19. Operations conducted under this Waiver may not exceed 50 knots (57 miles per hour) groundspeed;

**§ 107.39 Operations Over Human Beings Special Provisions.** sUAS operations may be conducted over human beings for the purpose of closed-set, restricted-access motion picture and television filming and production provided:

20. Small unmanned aircraft system (sUAS) operations over human beings in accordance with the Flytcam Motion Pictures, a unit of SENG LLC, UAS Motion Picture, Television, Commercial, and Survey Operations Manual and exemption issued under Section 333 of the FAA Modernization and Reform Act of 2012, docket number FAA-2015-4206-0001.
21. Prior to operations conducted subject to this Waiver, the Responsible Person must develop and maintain an operations manual that contains at least the following items:
  - a. Operator Information. Name, address, remote PIC and telephone number.
  - b. Distribution and Revision. Procedures for revising and distributing the operations manual.
  - c. Persons Authorized. Specify criteria for designating individuals as Persons Authorized. The operations manual must include procedures to ensure that all operations are conducted at distances from persons in accordance with the special provisions in this Waiver.
  - d. Certificate of Waiver. The operations manual must include a copy of the current Waiver(s).
  - e. Plan of Activities. The operations manual must include procedures for the submission of a written plan of activities.
  - f. Permission to Operate. The operations manual shall specify requirements and procedures that the Responsible Person will use to obtain permission to operate over property or near vessels, vehicles, and structures in accordance with this Waiver.
  - g. Security. The manual must specify the method of security that will be used to ensure the safety of nonparticipants. This should also include procedures that will be used to stop activities when unauthorized persons, vehicles, or aircraft enter the operations area, or for any other reason, in the interest of safety.
  - h. Safety Briefing of Direct Participants and Persons Authorized. Procedures must be included to brief Direct Participants and Persons Authorized on the risks involved, emergency procedures, and safeguards to be followed during the operation.
  - i. Direct Participants Minimum Requirements. In accordance with this Waiver, the Responsible Person must specify the minimum requirements for all Direct Participants in the operating manual. The remote PIC at a minimum must be the holder of an airman certificate issued under 14 CFR part 107.
  - j. Operating Procedures. The manual must include procedures for completing normal, abnormal, and emergency procedures.
  - k. Communications. The operation manual must contain procedures to provide communications capability with Persons Authorized during the operation. Oral, visual, or radio communications may be used to keep Persons Authorized apprised of the operation.
  - l. Accident Notification. The operations manual must contain procedures for notification and reporting of accidents in accordance with this Waiver.
22. The Responsible Person's operations manual must be made available to the Administrator or an authorized representative upon request. If a discrepancy exists between the special provisions in this Waiver and the procedures outlined in the operations manual, the provisions herein take precedence and must be followed. Otherwise, the Responsible Person must follow the procedures as outlined in its operations manual;

23. The Responsible Person may update or revise its operations manual. The Responsible Person must track such revisions and present updated and revised documents to the Administrator or an authorized representative upon request. The Responsible Person must also present updated and revised documents if it applies for extension or amendment. If the Responsible Person determines that the intended operation differs from the purpose for which this waiver is granted, or if the intended operation would be contrary to or obviate a condition or limitation of this waiver, then the Responsible Person must apply for an amendment to their Waiver;
24. A copy of the current operations manual, including a copy of this Waiver, must be available to the remote PIC during sUAS operations that are the subject of this Waiver;
25. The Responsible Person must establish and maintain a Safety Management System (SMS) appropriate for the size, scope, and complexity of the waived operation. Guidance on establishing and maintaining an SMS is available in FAA Advisory Circular 120-92B;
26. Operations over Direct Participants are permitted. Direct Participants are human beings directly participating in the operation of the sUAS. These include the remote PIC, VO, and other personnel who are designated by the remote PIC as necessary for the safe operation of the sUA (e.g. a person whose duties are to maintain a perimeter to ensure that nonparticipants do not enter the closed-set, restricted-access area);
27. Operations over Persons Authorized are permitted. Persons Authorized are human beings necessary to accomplish the work activity directly associated with the operation who must receive a safety briefing including the potential risks and acknowledge and provide consent to those risks. The operation would not occur without these human beings involved;
28. Operations over human beings other than Direct Participants or Persons Authorized (Nonparticipants) are prohibited;
29. All operations must be conducted within a closed-set, restricted-access site. The restricted-access area must be under constant observation and secured by safety personnel. Consent is required from all Persons Authorized indicating they have received a safety briefing and acknowledge the risk prior to entering the closed-set, restricted-access area;
30. Sustained flight over human beings is not permitted. The sUA may only be flown over Persons Authorized, briefed, and consenting to be involved and necessary for the filming production, as specified in Flytcam's UAS Operations Manual;
31. Launch and recovery areas for normal and abnormal operations must be designated and marked to keep any human being not a Direct Participant out of the areas prior to, during, and immediately following flight operations;
32. Direct Participants must be easily identifiable visually;
33. The Responsible Person listed on this Waiver must ensure each remote PIC is trained in a manner consistent with how the sUAS will be operated under this Waiver and in operational procedures including evasive and emergency maneuvers. A flight demonstration, administered by the Responsible Person must be successfully completed and documented. All training and demonstration for any remote PIC and VO must be documented and available upon request by the Administrator or authorized representative. Training operations may only be conducted under the standard requirements of part 107 (without waiver). Training during operations over human beings is prohibited;

34. The Responsible Person must maintain the sUAS and its components in accordance with manufacturer's instructions. The aircraft manufacturer may provide the maintenance program, or, if one is not provided, the Responsible Person must develop one. sUAS maintenance includes scheduled and unscheduled overhaul, repair, inspection, modification, replacement, and system software upgrades of the sUAS and its components necessary for flight. Each sUAS operated under this Waiver must comply with all manufacturer safety bulletins. These procedures must be added to the operations manual;
35. Any sUAS that has undergone maintenance that affect the sUAS operation or flight characteristics, e.g. replacement of a flight critical component, must undergo a functional test flight prior to conducting further operations under this Waiver. Functional test flights may only be conducted by Direct Participants. The functional test flight may only be conducted under the standard requirements of part 107 (without waiver). Functional test flights during operations over human beings are prohibited;
36. For sUAS operations where GPS signal is necessary to safely operate the sUA, the remote PIC must immediately recover/land the sUA upon loss of GPS signal within the closed-set, restricted access area;
37. Any modification to the sUAS design is prohibited; repair and replacement of damaged components are allowed with a replacement part that is exactly the same as the original; no substitutions are allowed unless a new waiver application is submitted;
38. If the remote PIC loses command or control link with the sUA, the sUA must follow a predetermined route to either reestablish link or immediately recover/land within the closed-set, restricted-access area;
39. The remote PIC is responsible for halting or canceling operations if, at any time, the safety of human beings or property on the ground or in the air is in jeopardy, or if there is a failure to comply with the provisions of this Waiver;
40. At least 72 hours prior to operations, the Responsible Person must submit a written Plan of Activities to the local Flight Standards District Office having jurisdiction over the proposed operating area.

The Plan of Activities must include at least the following:

1. Dates and times for all flights. For seasonal or long-term operations, this can include the beginning and end dates of the timeframe, the approximate frequency (e.g. daily, every weekend, etc.), and what times of the day operations will occur. A new plan of activities must be submitted prior to each season or period of operations.
2. Names and phone numbers of the Responsible Person and remote PIC on-site responsible for the operation.
3. Make, model, and serial or aircraft registration number of each sUAS to be used.
4. Name and certificate number of each sUAS remote PIC involved in the operations.
5. Signature of Responsible Person issued the Waiver stating the plan is accurate.
6. A description of the flight activity, including maps or diagrams of the area over which operations will be conducted and the altitudes essential to accomplish the operation.
7. A safety risk assessment for each operation conducted under the provisions of this Waiver. Guidance on conducting a risk assessment can be found in the FAA Advisory Circular 107-2.

Note: A new Plan of Activities must be submitted should there be any changes to items (1) through (7);

41. System failures shall be documented as described in Flytcam's UAS Operations Manual; and
42. Recordkeeping Requirements. Records shall be retained for a period of 90 days after the expiration date of the Waiver. The Responsible Person shall keep at its principal business office or at other places approved by the Administrator or an authorized representative, and shall make available for inspection by the Administrator or an authorized representative the following:
  - a. Name of Operator, Responsible Person, Waiver number and Aircraft registration number
  - b. UAS type and model
  - c. All operating locations, to include location city/name and latitude/longitude
  - d. Number of flights (per location, per aircraft)
  - e. . Total aircraft operational hours
  - f. Average altitude of flights
  - g. Takeoff or Landing damage
  - h. Equipment malfunctions. Reportable malfunctions include, but are not limited to the following:
    - i. On-board flight control system
    - ii. Navigation system
    - iii. Power plant failure in flight
    - iv. Fuel system failure
    - v. Electrical system failure
    - vi. Control station failure
    - vii. Any failure or malfunction that was followed by a ground collision
      - Was the flight conducted over Persons Authorized?
      - Were any persons impacted by the sUAS?
  - i. The number and duration of lost link events (control, performance and health monitoring, or communications) per sUA per flight.